

**THERMAL BARRIER COATING WITH STABILIZED COMPLIANT
MICROSTRUCTURE**

ABSTRACT OF THE DISCLOSURE

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[0056] A thermal barrier coating for a gas turbine component includes a bond coating layer, at least a first segmented columnar ceramic layer on the bond coating layer, and a particulate structure-stabilizing material disposed within a plurality of segmentation gaps within the columnar ceramic layer(s).

- 10 The thermal barrier coating may further comprise, a second segmented columnar ceramic layer of yttria stabilized hafnia on the first segmented columnar ceramic layer, and an outer, continuous, non-segmented sealant layer covering the yttria stabilized hafnia layer to prevent ingress of extraneous materials into the segmentation gaps. Methods for depositing a thermal barrier
- 15 coating on a substrate are also disclosed.